



PANDEMIC INFLUENZA PREPAREDNESS, RESPONSE, AND RECOVERY GUIDE FOR CRITICAL INFRASTRUCTURE AND KEY RESOURCES

Executive Summary

Public health experts warn pandemic influenza poses a significant risk to the United States and the world—only its timing, severity, and exact strain remain uncertain. International, Federal, State, local, and tribal government agencies are diligently planning for a massive public health response to this looming threat. The disease impacts could be severe and could affect our nation’s economic and social security. It is important for you to take action.

As part of the pandemic preparedness strategy of the U.S. Government, the Department of Homeland Security (DHS) provides support to public and private sector Critical Infrastructure and Key Resource (CI/KR) national councils and businesses in the development and execution of their pandemic contingency plans. The U.S. Government has formally identified 13 Critical Infrastructure and four Key Resource sectors that are essential to our nation’s economic and social security and stability. This *Pandemic Influenza Preparedness, Response, and Recovery Guide for Critical Infrastructure and Key Resources* serves as one of the practical tools DHS has developed for business owner-operators and their contingency planners to enhance pandemic planning. This Guide assembles the primary government and pandemic influenza-specific background materials, references, and contacts in one place. It introduces an enhanced business continuity planning process for a pandemic and provides business planners with numerous sector-specific and common pandemic influenza planning variables keyed to escalating disaster phases.

The primary purpose of this Guide is to stimulate the U.S. private sector to act *now*. With this Guide, DHS intends to assist our nation’s 17 CI/KR sectors, and business and industry in general, with the actions they should be taking to prepare, respond, and recover from a localized outbreak as well as the broader pandemic. *This Guide urges private sector business planners to expand upon their traditional notions of continuity of operations, as a pandemic promises to test the limits of their current contingency plans.*

Pandemic Planning

A comprehensive Federal approach to prepare for and combat a pandemic influenza is in place. *The National Strategy for Pandemic Influenza* (November 2005) and the *Implementation Plan for the National Strategy for Pandemic Influenza* (May 2006) emphasize the need for proactive efforts that combine the full capabilities and support of all levels of government and the private sector. The Federal government also formally launched a Web site offering the latest information and coordination links on pandemic influenza (www.pandemicflu.gov). As outlined in the *Strategy*, the Federal government will use its resources to address the pandemic with the intent of:

- stopping, slowing, or otherwise limiting the spread of a pandemic to the United States;
- limiting the domestic spread of a pandemic, and mitigating disease, suffering, and death;
- sustaining infrastructure and mitigating impact to the economy and society.

To download a copy of the complete CI/KR Pandemic Guide, please log on to
www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf or
www.ready.gov/business/_downloads/pandemic_influenza.pdf.



Pandemic preparedness and response is a shared responsibility among all levels of government and the private sector. With 85 percent of the nation's critical infrastructure in private hands, the business community plays a vital role in ensuring national pandemic preparedness and response. As outlined in the *National Strategy* and the *Implementation Plan*, the private sector's roles include:

- developing pandemic preparedness and response continuity of operations plans and establishing contingency systems to maintain delivery of essential goods and services;
- preparing to sustain operations with little outside aid for some period of time, as the pandemic's rapid spread may preclude shifting government and private sector disaster support resources from "safe" to affected areas;
- establishing an ethic of infection control in the workplace, and prevention options for such as working offsite, and for worker and worker family education;
- establishing internal surveillance and detection protocols to monitor the health of workers and stakeholders and to inform State and local public health officials;
- assessing and strengthening all supply chain and distribution processes for essential goods and services;
- monitoring regional/national/international pandemic threat levels for trigger point changes that will affect the business;
- collaborating with government officials and community stakeholders for mutual support and to share planning, preparedness, response and recovery information; and
- establishing partnerships with other members of the business sector to provide mutual support and maintenance of essential services during a pandemic.

Pandemic Health Context

The risk from a severe pandemic poses numerous and potentially devastating consequences for CI/KR in the United States. A severe pandemic will likely reduce dramatically the number of available workers in all sectors, and significantly disrupt the movement of people and goods, which will threaten essential services and operations within and across our nation's CI/KR sectors. Industries in every sector will experience varying degrees of pandemic impacts.

When developing their pandemic plans, business contingency planners must assess, prioritize, and incorporate health impact assumptions and implications into their planning. Based upon analyses of previous pandemics, the U.S. Department of Health and Human Services (HHS) estimates the next pandemic may cause severe health, social, and financial repercussions, and the department has based its pandemic preparedness strategy on a series of health planning assumptions, including:

- Susceptibility to the pandemic influenza will be universal.
- Vaccines are unlikely to be available for most people in the first pandemic wave.
- Antiviral drugs may be in short supply and demand will be high throughout the pandemic.
- The disease attack rate will likely be 30 percent or higher in the overall population.
- In a severe pandemic, absenteeism attributable to illness, the need to care for ill family members, and the fear of infection may reach 40 percent during the peak weeks of a community outbreak.

To download a copy of the complete *CI/KR Pandemic Guide*, please log on to
www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf or
www.ready.gov/business/_downloads/pandemic_influenza.pdf.



- Numerous, near-simultaneous outbreaks will rapidly sweep across the nation and the world involving both urban and rural areas.
- Pandemics typically present in “waves” with one wave likely to last nearly three months and outbreaks in individual communities lasting six to eight weeks.
- More than one disease wave may affect a community during a single year.
- An estimated 90 million persons may become ill and 45 million may require outpatient care.
- Extrapolations from past pandemics suggest between 865,000 and 9,900,000 persons may be hospitalized, and between 209,000 and 1,903,000 Americans could die.

Pandemic Disease Containment/Control Strategies

Pandemic containment and response strategies will have varied implications and efficacy within and across CI/KR sectors. Experts have designed these health-based containment strategies to reduce disease spread and death primarily by limiting social interactions. Yet, all of these strategies also have economic impacts and social consequences that, when coupled with the health impact assumptions, compound the direct effects on businesses, both big and small. The key disease containment strategies under consideration include:

- **Isolation:** Separation of persons with specific infectious illnesses in their homes, in hospitals, or in designated healthcare facilities.
- **Quarantine:** Separation and restriction of the movement, usually of a group of people, who, while not yet ill, have potentially been exposed to an infectious agent.
- **Social Distancing:** Within the workplace, social distancing measures could take the form of: modifying the frequency and type of face-to-face employee encounters (e.g., placing moratoriums on hand-shaking, substituting teleconferences for face-to-face meetings, staggering breaks, posting infection control guidelines); establishing flexible work hours or worksite, (e.g., telecommuting); promoting social distancing between employees and customers to maintain a minimum of three-foot spatial separation between individuals; and implementing strategies that request and enable employees with influenza to stay home at the first sign of symptoms.
 - **Effect:** Social distancing will potentially affect all aspects of business operations. It presents specific challenges where public contact is unavoidable (e.g., retail operations) or where workers share a common workspace (e.g., manufacturing plants, trading floors, operations or process control centers, etc.).
- **Closing Places of Assembly:** Voluntary or mandatory closure of public places, including churches, schools, and theaters.
 - **Effect:** Worker absenteeism will impact all business activity levels due to illness, but may also increase dramatically when additional workers must remain home to care for ill family members and children out of school.
- **“Snow Days” and/or Furloughing Non-Essential Workers:** Voluntary closure of all non-essential business activities and/or the furloughing all non-essential workers.
 - **Effect:** Extended “snow days” and furloughing employees for days or weeks at a time can have widespread financial impacts for workers and businesses.
- **Restricted Movement:** Restricting movement at borders and applying quarantine protocols.

To download a copy of the complete CI/KR Pandemic Guide, please log on to
www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf or
www.ready.gov/business/_downloads/pandemic_influenza.pdf.



- **Effect:** The combination of high worker absenteeism (affecting both supply chain businesses and border control officials) and potential border and quarantine restrictions for disease containment may compound essential personnel movement and supply chain disruptions.

Continuity of Operations Plan-Essential (COP-E)

Disaster planning and preparedness is a fundamental requirement of good business practice. All organizations must ensure their ability to continue essential operations in response to significant operational interruptions. A severe pandemic complicates the equation. Due to the compounded effects of health impact assumptions, disease mitigation strategies, wide spread geographic reach, and extended duration, a severe pandemic falls at the extreme end of the disaster continuum. Business continuity plans have integrated most known natural and manmade disaster scenarios, but until recently, they have generally not accounted for pandemic influenza. The scale and scope of a catastrophic disaster's impacts and outcomes demands a dedicated level of effort and investment beyond current business continuity planning. COP-E extends and refines business continuity planning for the extreme case and integrates it within a suite of business disaster plans.

Pandemic preparedness must involve all type and size businesses. Moreover, it requires a shift in business contingency planning from one that anticipates a short-term, near-normal disruption to one that prepares for an extreme long-term, catastrophic event. There are fundamental differences between disasters that impact a business or even businesses across a region and one that involves all businesses to varying degrees across the nation and the world. For a severe pandemic, private sector businesses must “cope” to maintain not only themselves but to sustain the nation's economic and social stability as well. The COP-E planning model addresses:

- COP-E planning accounts for pandemic-specific impacts and implications. It also assumes that a major disaster of national significance, such as a pandemic, can cascade swiftly into a national and international catastrophe.
- COP-E processes exploit a range of “worsening” operational scenarios intended to facilitate a measured examination of impacts and compounding effects. COP-E scenarios and planning actions provide business planners an expansive yet detailed perspective within which to develop graduated response and recovery actions. They aid planners to prioritize their actions and costs in a measured fashion, and prepare them for the rapid adjustments necessary as pandemic impacts worsen.
- The World Health Organization and U.S. Government Pandemic Alert Phases/Stages and pandemic planning scenarios serve as the planning context. The three COP-E operational scenarios and the extensive COP-E phased action checklists are the planner's basic tools to first assess and then expand their planning efforts to the level necessary for addressing a catastrophic disaster.

Successful businesses know which activities and personnel are most critical in their efforts to maintain essential services. While the government continues to make determined progress in its pandemic planning, it still has much to do to assist all CI/KR sectors to adequately plan. The *Pandemic Influenza Preparedness, Response, and Recovery Guide for Critical Infrastructure and Key Resources* takes a positive first step toward achieving this crucial outcome.

To download a copy of the complete CI/KR Pandemic Guide, please log on to
www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf or
www.ready.gov/business/_downloads/pandemic_influenza.pdf.